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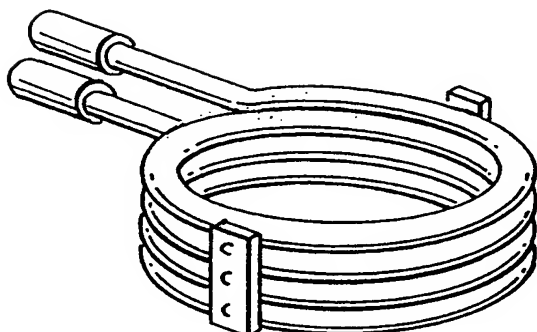


FIG. 1a

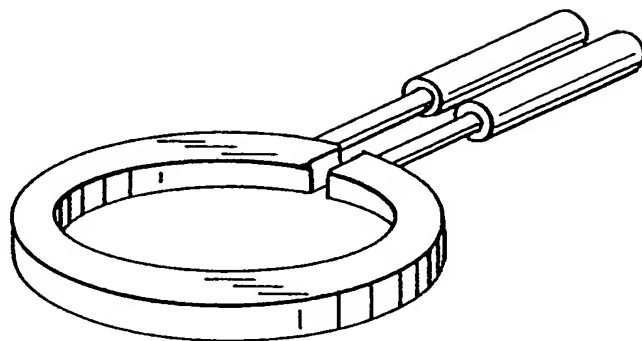


FIG. 1b

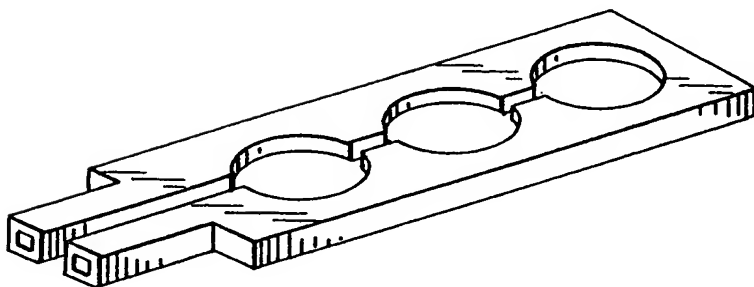


FIG. 1c

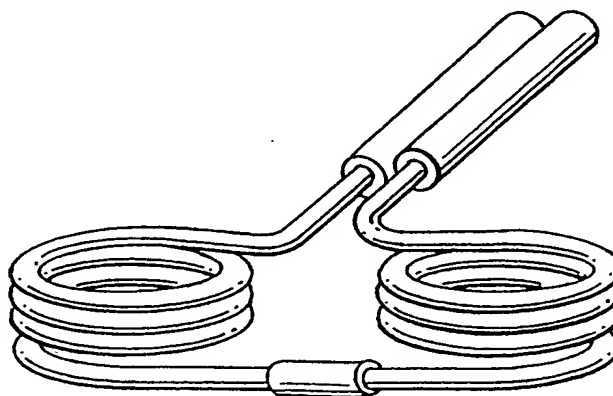


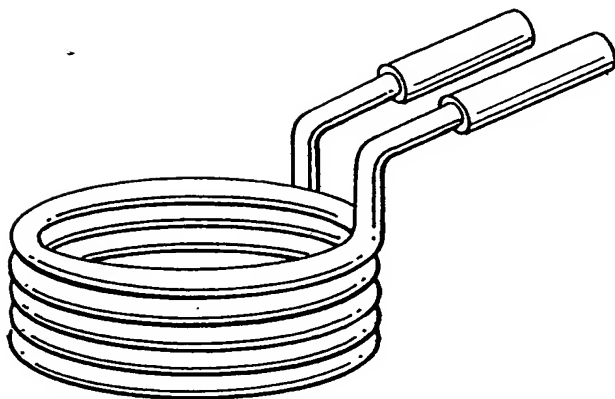
FIG. 1d

AN ADHESIVE OR SEALANT COMPOSITION INCLUDING HIGH EFFICIENCY
HEATING AGENTS AND METHODS OF USE

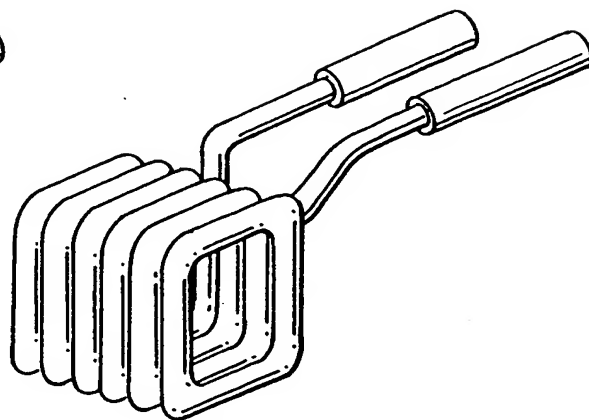
Inventor: Robert H. Johnson, Jr.

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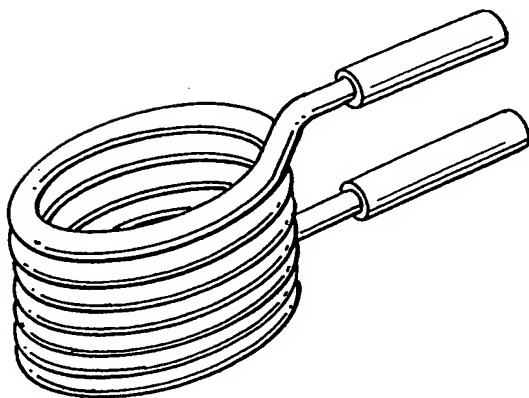
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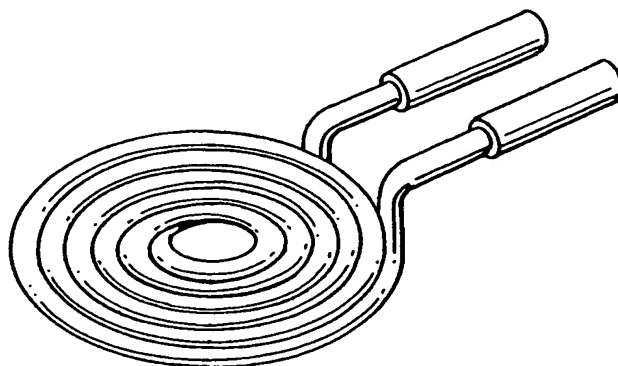
ROUND
FIG. 2a



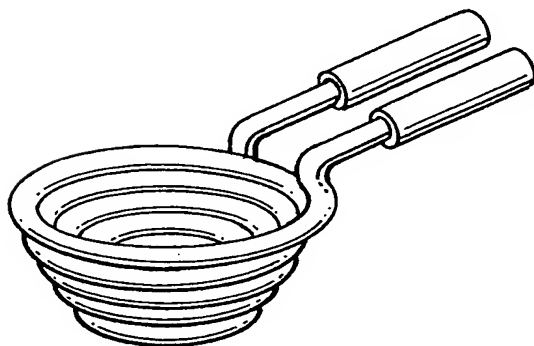
RECTANGULAR
FIG. 2b



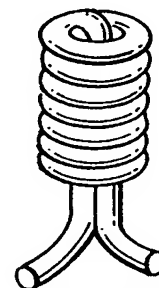
FORMED
FIG. 2c



PANCAKE
FIG. 2d



SPIRAL-HELICAL
FIG. 2e



INTERNAL
FIG. 2f

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FIG.3

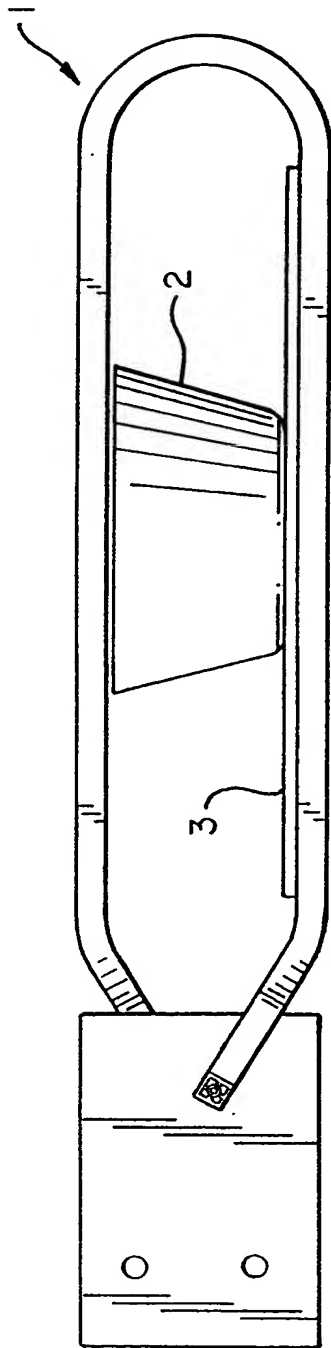
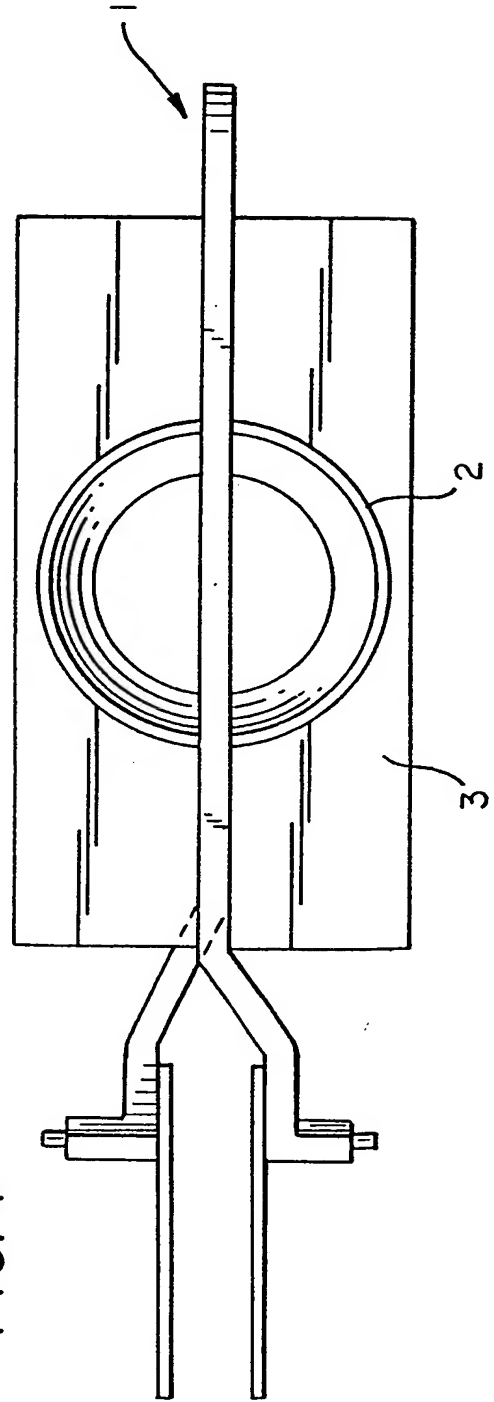
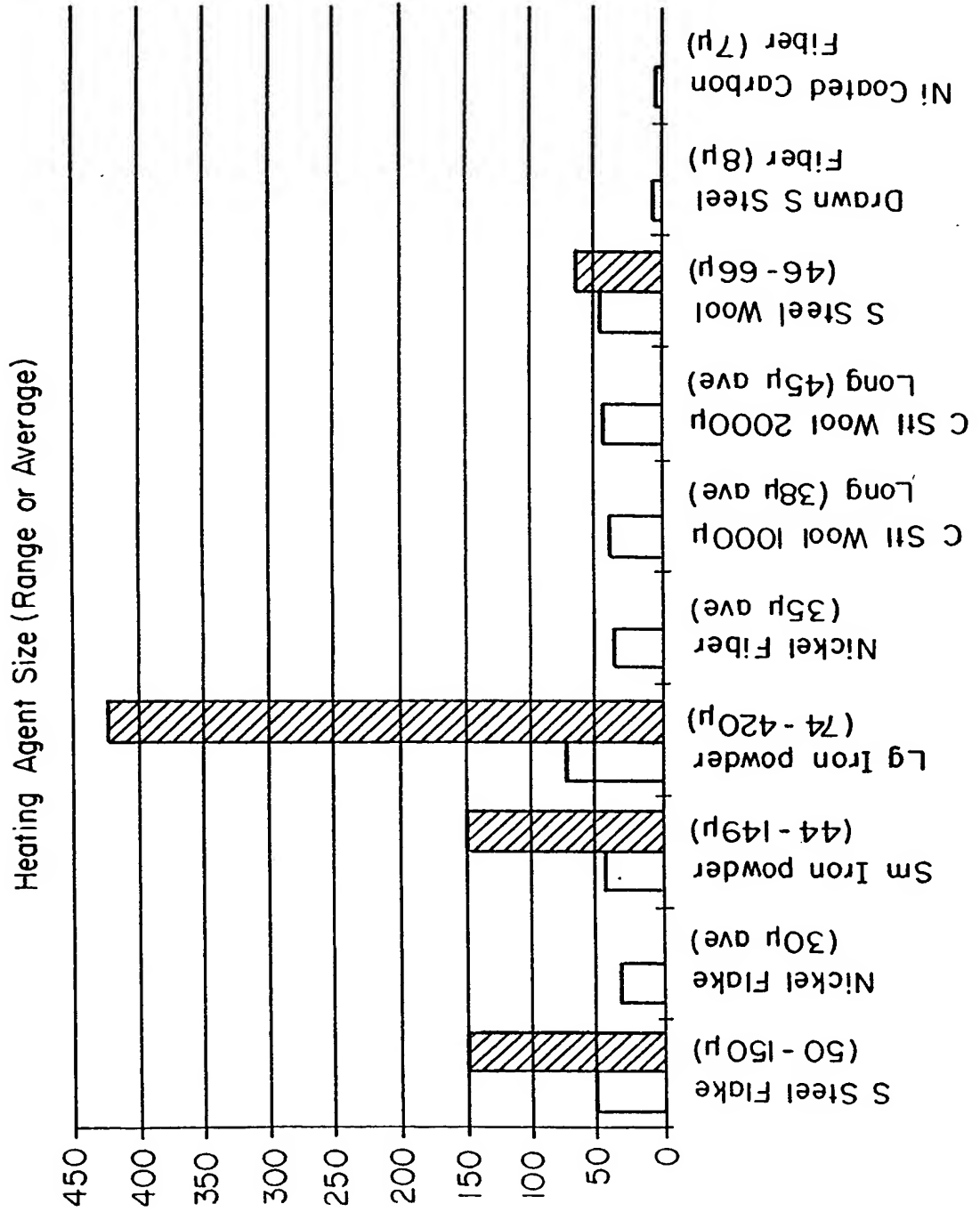


FIG.4



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FIG. 5



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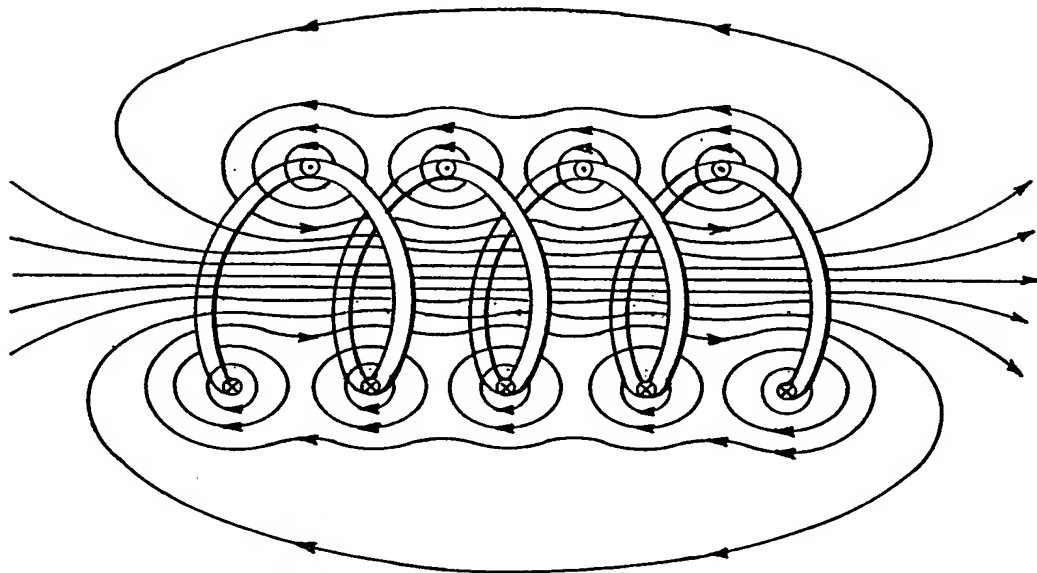


FIG. 6

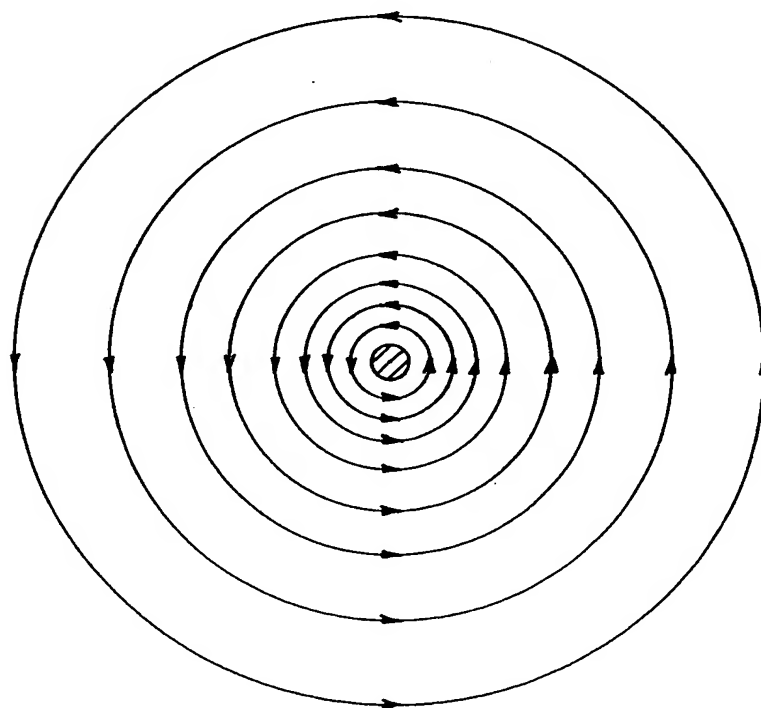
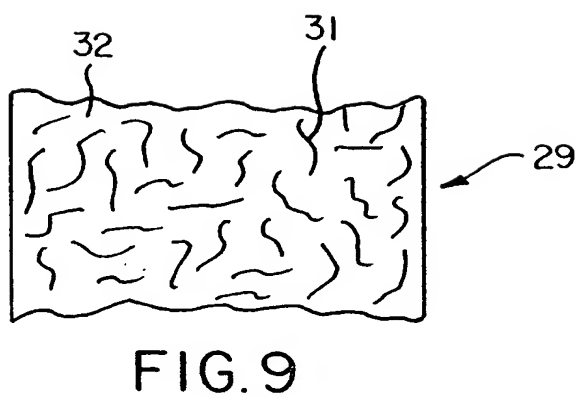
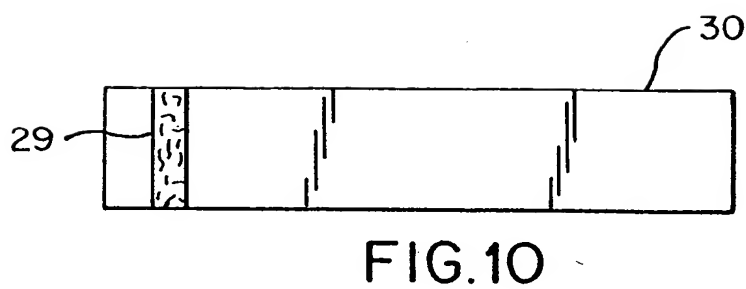
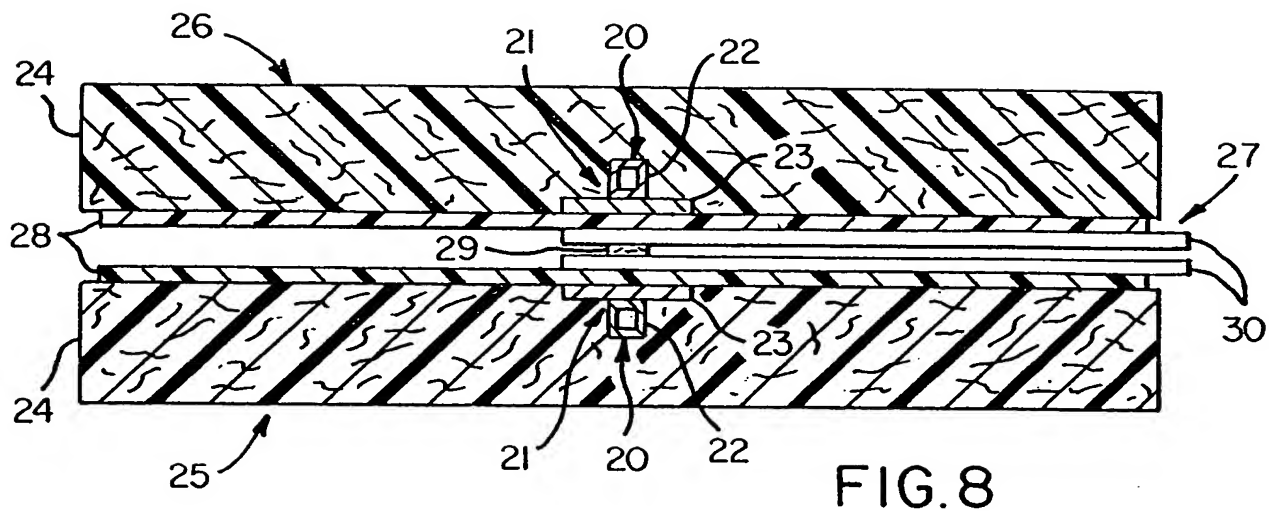


FIG. 7

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FIG.11

Table I

The skin depths, based on the values of Monovoukas an Tudbury are as follows:
Skin Depths in microns

Freq.	Nickel		Low C Steel/Iron			400S. Steel		300 S.Steel	
	68°F	600°F	68°F	200°F	1000°F	68°F	1000°F	68°F	600°F
200 KHz	28	61	64	72	138	140	180	968	1120
335 KHz	23	47	49	56	106	108	138	747	866
388 KHz	21	44	46	52	99	101	129	694	805
488 KHz	19	39	41	46	88	90	115	619	718
738 KHz	15	32	33	38	72	73	93	503	583
3.5 MHz	7	15	15	17	33	34	43	231	268
4.0 MHz	7	14	14	16	31	31	40	216	251
5.0 MHz	6	12	13	14	27	28	36	193	224

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FIG. 12

Table II

	335	388	488	738	35M	4.0M	5.0M	335	388	488	738	35M	4.0M	5.0M
Susceptor	ΔOil	ΔOil	ΔOil	ΔOil	ΔOil	ΔOil	ΔOil							
Sec	20	20	20	20	20	20	20							
Ni Flake 15-20μ x 1μ	0	0	0.4	2	0	2	4	0%	0%	14%	29%	0%	8%	14%
Ni Flake 15-40μ x 2μ	0	0.4	0.4	4	0	2	4	0%	25%	14%	57%	0%	8%	14%
Ni Flake 30x 0.4 μ	0	0.4	0.4	5	2	4	4	0%	25%	14%	71%	17%	17%	14%
Ni Fiber 35x1000μ	2.4	3.6	5.6	14	38	48	60	200%	225%	200%	200%	317%	200%	214%
Ni Fiber 35x 260μ	1.2	2	3.2	9	20	30	48	100%	125%	114%	129%	167%	125%	171%
C steel wool 38x1000μ	11.2	15.6	28	66	106	152		933%	975%	1000%	943%	883%	633%	
C steel wool 45x 2000μ	15.6	23.2	38.4	86	108	152		1300%	1450%	1371%	1229%	900%	633%	
Iron powder 74 - 420μ	1.2	1.6	2.8	7	12	24	28	100%	100%	100%	100%	100%	100%	100%
Iron powder 35- 150μ	0.8	0.8	1.2	3	6	16	18	67%	50%	43%	43%	50%	67%	64%
300 SS Flake 50-150μ	0.4	0.4	0.8		2	0	2	33%	25%	29%		17%	0%	7%
300 SS Fiber 8x 4000μ	2		3.2	16	20	76	112	167%		114%	229%	167%	317%	400%
300 SS Raps Fb 75x3500μ	0.4	0.4	0.4					33%	25%	25%				
Ni Carbon Fiber 7x 6000μ			1.2	9	120	140	240			43%	129%	1000%	583%	857%
400 SS Dn Fb 22 x 3500μ	9.2	12.8	22.4					767%	800%	800%				
400 SS Wool 45x2000μ	14	20.8	37.6					1167%	1300%	1343%				
400 SS Wool 45x4000μ	13.2	20	33.6					1100%	1250%	1200%				
400 SS Raps Fb 150x4500μ	7.2	9.6	18					600%	600%	643%				

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FIG. 13

Table III

Susceptor	388 Khz	488KHz	388Khz	488 KHz
	Δ Oil, F°	Δ Oil, F°	Heating rate as %	
	20 sec	20sec	of heating rate of	
	6 turn	6 turn	iron powder 74 - 420 μ	
Ni Flake 15 - 40x2 μ	76	116	380%	557%
Ni Flake 30x0.4 μ		108		386%
Ni Flake 15 - 20x2 μ	36		180%	
300 SS Flake 50-150 μ		28		100%
Ni Fiber 35 x1000 μ	32	44	160%	157%
Ni Fiber 35x 260 μ	12	12	60%	43%
300 SS fiber 8x4000 μ	130	196	650%	700%
Ni Carbon Fiber 7x 4000 μ	86	116	430%	414%
400 SS Dn Fiber 22x3500 μ	88	152	440%	543%
400 SS Wool 45x 2000 μ	134	188	670%	671%
400 SS Wool 45x 4000 μ		184		657%
C steel wool 38x 1000 μ	118	156	590%	557%
C steel wool 45 x 2000 μ	176	284	880%	1014%
Iron powder 74 - 420 μ	20	28	100%	100%
Iron powder 35 - 150 μ	2	8	10%	29%
300SS RapS Fb 75-3500 μ		16		57%
400SS RapS Fb150x4500 μ		100		357%

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FIG. 14

Table IV

Heating Agent	% Loading by weight	Optimum weld time 5.5MHz	64% iron powder as % of optimum weld time	Optimum weld time 3.6MHz
Iron powder 74 - 420 μ	64%	22sec	100 %	No weld
C Steel Wool Fiber 38 x 1000 μ	10 %	14sec	157 %	
	15 %	10sec	220%	25sec
	25 %	5sec	440%	15sec
	35%	3 sec	730%	12sec
	45%	2 sec	1100%	
S Steel Wool Fiber 45 x 2000 μ	25%	7 sec	310%	40sec
	35%	4 sec	550%	25sec